

Appl. No. 10/075,538
Amdt. dated 6/19/06
Reply to Office action of 2/17/06

DRAWING AMENDMENTS

The attached sheet of drawings includes changes to Figs. 2 and 3 only. This sheet, which includes Fig. 4, replaces the originally-filed drawing sheet 2/8.

Specifically, the identification of the ordinate and the abscissa and the reference characters have been shifted upwardly and to the left hand side in both figures to correct an inadvertent printing error.

The approval and entry of the enclosed replacement drawing sheet 2/8 is respectfully requested.

Attachments: Replacement Sheet
Annotated Sheet Showing Changes

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REMARKS

Reconsideration of the application is requested.

Claims 1-21 remain in the application. Claims 1 and 21 have been amended.

In item 1 on page 2 of the above-identified office action, claims 1 to 20 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

More specifically, the Examiner adds that in the third limitation of claim 1, that claim 1 refers to measured values. However, the Examiner states that what the measured values regard cannot be determined. "Is it chromaticity or intensity, brightness?"

Before responding to this question, it is necessary to correct an error in the translation of claim 1 from the original German. The adverb "colorimetrically" was applied to both "printed" and "measured", whereas it should have been applied only to "measured". This is believed to be clear, for example, from the Abstract of the Disclosure.

By taking this correction into consideration, it is believed that the question raised by the Examiner with regard to the measured values should be resolved. A colorimetric measurement is well known in the Art. The position of a measured color in a color system can be determined by this measurement.

For more information about color measurement, submitted herewith are copies of pages 100-107 and 300-306 of the "Handbook of Print Media" edited by Helmut Kipphan, published by the Springer Press, Berlin, Heidelberg, 2001. Note especially page 107, paragraph 3, "Colorimetric measurements...indicate color location". On page 102, last sentence, there is stated that measuring the "optically effective area coverage" is a feature of densitometry. In this regard, it is noted that the cited patent to Six involves densitometric measurement (note col. 5, lines 46-58).

With regard to rejected claim 1, it is noted that this claim calls for defining an inner reference curve in the color system. The curve consequently lies within the color system and requires the existence of at least two different points in this color system, with a line connecting these points.

With N printing inks forming a color solid in the color system, this color system is determined as having at least three dimensions.

The inner curve is defined by selecting one printing ink or a combination of printing inks, which is defined by the mentioned group. The curve can be achieved in different ways. A first way is established by determining the distribution of one of the printing inks in the color space. This can be achieved by varying the tonal value of this printing ink. For example, this curve is defined by the color black. The curve may also be defined by a variety of different inks. Starting from one point with a first combination of printing inks, the curve proceeds in the color system by varying one or more color values of the printing inks.

Boundary surfaces are then defined between this curve and an outer envelope of the color solid. It should be noted that that there is only one outer envelope of the solid. There is no printable color outside the surface that represents this envelope, at least not by the printing inks defining the solid. With these boundary surfaces, the solid is being segmented.

These boundaries are defined by printing the first test forms. As surfaces starting at the inner curve, they are formed by the color or the colors of this inner curve and by varying one printing ink or a combination of the printing inks; at least the color distribution of the one printing ink or the combination of printing inks represents another curve in the color system starting at the inner curve and extending towards the enveloping surface of the color solid. The boundaries are thus surfaces spanned by the inner curve and other curves starting at the inner curve and extending towards the enveloping surface.

From [0054], [0055] and [0059], it is believed to be quite clear that N-1 first test forms are to be printed. N color sectors can thereby be formed, and a color profile can be determined by printing the second test forms and measuring them colorimetrically.

These second test forms are printed by a combination of the colors from the adjacent boundaries [0055], [0060]. In this way, a bijective mapping of the colors of the device-independent color system to the colors of the color solid of the printing inks is achieved.

Proceeding now to the main reference, the patent to Six, applied by the Examiner in his rejection of claims 1-8, 13 and 19 to 21, it is noted that Six does not show an inner curve in a color system. The curve in Fig. 4 of the patent to Six describes a relationship between measured color values with or without black ink. Because one color point can be created by using different combinations of CMY, both values $X(\text{CMYB})$ and $X(\text{CMY})$ are obtained by using the same combination of CMY (note col. 5, lines 19-25 of Six).

The curves 126 of Six result from the curve 120 by varying the color black (col. 9, line 4-5 of Six). It is unclear to Applicant as to how these curves form boundary surfaces between the inner reference curve and the outer envelope of a color solid. In fact, no enveloping surface is shown in Six.

Moreover, Six does not teach how to determine the color profile. He merely shows how to control the ink feed by comparing the original and the printed product. Because a printing form has already been created in Six for use in the printing process, determining a color profile is unnecessary and only a method is described for achieving a deviation in the effective area covering of the inks (col. 9, lines 32-45 of Six). There is no need for determining a color profile,

which is consequently also not shown in Six, nor is there any mention by Six that two different combinations of CMY may show the same $X(\text{CMY})$ value. Fig. 4 of Six shows linear curves, therefore, such a printing profile must have been used for creating the printing form used for the printing, otherwise there would be more than one point of $X(\text{CMY})$ showing the same value for $X(\text{CMYB})$ and there would be no straight lines in Fig. 4. Thus, Six shows a method used much later after determining a printing color profile.

As noted hereinbefore, Six is concerned with densitometric measurements, not colorimetric, inasmuch as measuring the "optically effective area coverage" is a feature of densitometry (note col. 5, lines 46-58 of Six, as mentioned hereinbefore).

It is also appreciatively noted that the Examiner has only objected to claims 9-12 and 14-18, and considers those claims to be allowable if rewritten to overcome the rejection under 35 U.S.C. §112, second paragraph, and to include all of the limitations of the base claim which, in this case, is amended claim 1. It is believed that claim 1, as amended, and, in light of the foregoing comments, is now patentable and allowable over Six, so that claims 9-12 and 14-18, each of

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which is dependent on amended claim 1, are now believed to avoid the rejection under 35 U.S.C. §112, second paragraph, and to be allowable together with amended claim 1.

Should the Examiner maintain his rejection of amended claims 1 and 21, respectfully, over the patent to Six alone and over the patent to Six and the cited state of the art, it would be appreciated if the Examiner were to telephone applicant's attorney to discuss any further issues that may have arisen regarding the patentability of the claims.

In reviewing the drawings of the instant application while preparing the response to the outstanding office action, it was found that, in the copies of the drawings that were filed in the instant application, the reference characters and the identification of the ordinate and the abscissa were all inadvertently shifted downwardly and to the right-hand side of the respective Figs. 2 and 3. New Figs. 2 and 3 with appropriate corrections are accordingly submitted herewith.


Petition for extension is herewith made. The extension fee for response within a period of one (1) month pursuant to Section 1.136(a) in the amount of \$120.00 in accordance with Section 1.17 is enclosed herewith.

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Please charge any other fees, which might be due with respect to Sections 1.16 and 1.17 to Deposit Account No. 12-1099 of Lerner Greenberg Stemer LLP.

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Respectfully submitted,



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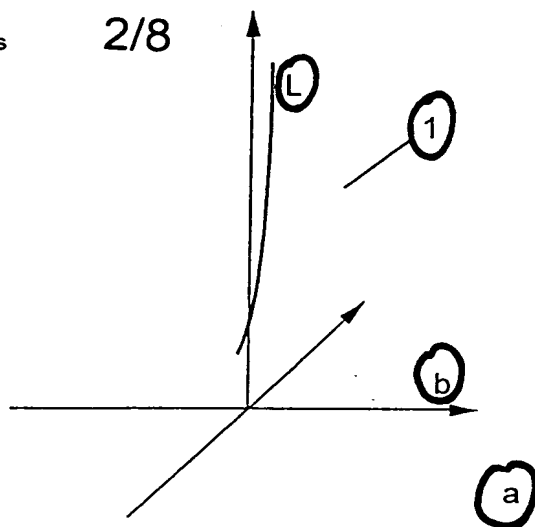


Fig. 2

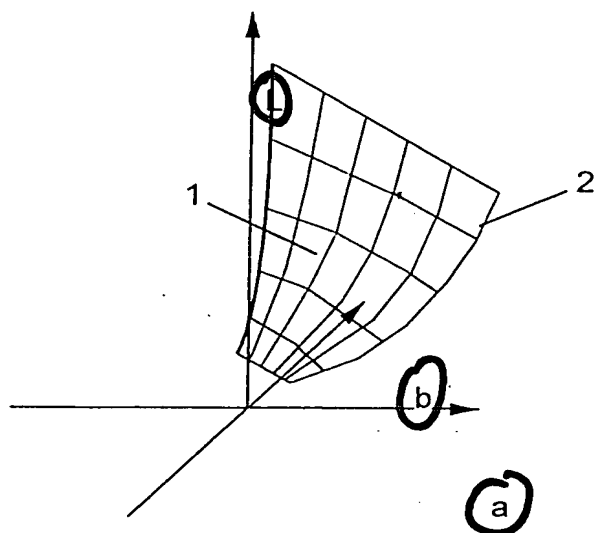


Fig. 3

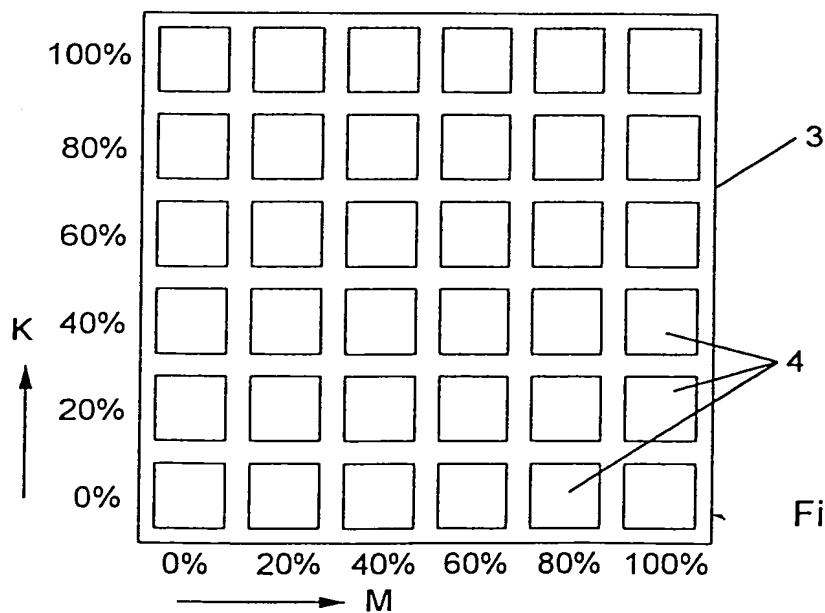


Fig. 4